NUTRITION SERVICES IN PRENATAL CARE

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It is generally accepted today that environmental factors operating through the mother may affect the course of embryonic development of the child and in this way modify the outcome for mother and child. Nutrition undoubtedly is one of these factors and merits important consideration. Basic research to enlarge our knowledge in this area is of vital importance. Yet practical application often lags far behind existing information. It is our belief also that if this information is utilized to better advantage, possibilities exist which may clarify further some of the research findings of prenatal studies about which controversy exists.

Human research in nutrition is difficult, but the importance of the findings is great. We need to re-emphasize that the life of the child begins with conception, not with birth.

Present evidence suggests that prenatal services might accomplish for the mother: improved health during pregnancy; fewer complications, including less toxemia; safer delivery; lowered maternal mortality; better health following delivery; greater likelihood of breast feeding and better quality of breast milk. For the infant: decreased mortality; better growth and development and decreased morbidity resulting from lessened incidence of prematurity, improved physical condition at birth and during infancy, and lessened incidence of congenital malformations provided Warkany's work with animals is transferable even in part to man.

An educational program to improve the nutrition of all women of childbearing age, together with practical dietary advice early in pregnancy, should be our long-range nutrition goal. Progress naturally is slow. Hence, results often emerge too slowly and undramatically to stimulate action for possible future progress. For this reason, it sometimes is better in a new field, to concentrate on a smaller segment of the problem.

This consideration influenced us to alter the nutrition consultation services in the Out-Patient Department of the Boston Lying-in Hospital. Nutrition consultation now is an integral part of the treatment of all patients in the Toxemia Clinic. It is too early for statistical findings or conclusions; but we have been encouraged sufficiently to hope that others may be interested in a similar project.

Toxemia Clinic

All women referred to the Toxemia Clinic are seen by the obstetrician. He refers each one to a nutritionist with recommendations as to dietary instruction. The nutritionist first concerns herself with the present food habits, social, and economic conditions; then instructs the patient about the diet she must have to meet the doctor's recommendations. The nutritionist tries to motivate the patient and to give reasons for any necessary changes in food habits. The diets used in this clinic are high protein diets, controlled at normal or somewhat below normal caloric levels, and controlled in sodium levels as the case may necessitate. All of these diets are made up from the basic foods recommended in our normal pregnancy diet.

The first interview may take three-quarters of an hour or longer. It is imperative that the mother go home with a real understanding of her diet and reasons for following it. Seldom does one have to spend much time with her at later interviews. When she returns, every week or two, certain clinic tests are given before she sees the doctor; if these show undesirable symptoms, she sees the nutritionist first. A report is sent in to the doctor as to how well she is following her diet. The doctor then includes dietary discussion in his interview. She returns to the nutritionist for instruction as to changes or clarification in her dietary regime. The patient recognizes this close cooperation between doctor and nutritionist, is impressed by it, and usually responds well.

Mrs. Burke

Any results which may have been attained even in this short period must be considered to be the results of the entire prenatal service of this Clinic of which the nutrition service is an integral part. Factors other than the nutrition consultation service unquestionably have operated to improve prenatal care. Factors outside the Clinic, such as changing social and economic factors, must be considered also and the fact that the incidence of toxemia has decreased markedly in recent years. Nevertheless, it still is one of the leading causes of maternal mortality. It appears to us that the nutritional control of these patients is one of the factors in the control of toxemia and as such has contributed measurably to the accomplishments of this Clinic in the past year.

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Glances AT NUTRITION RESEARCH

Milestones in our search for understanding of the importance of nutrients to man are marked by correlation of biochemical measurements and subjective symptoms. Two of the studies reported here show such correlation.

Amino Acid Requirements of Man—The first of a series of papers reporting the results of extensive investigation of the amino acid requirements of man has been published. The paper presents evidence demonstrating that valine and methionine are essential components of the diet of man. Removal of either from the basal diet of young men resulted in a negative nitrogen balance accompanied by subjective symptoms of extreme fatigue, profound failure of appetite, and marked increase in nervous irritability. These symptoms appeared within 24 hours and disappeared within the same period of time after the missing amino acid was replaced in the diet. The failure of appetite made it impossible to continue the deficiencies long enough to determine any difference in the characteristics of a specific amino acid shortage.

—J. Biol. Chem. 182:541 (Feb.) 1950.

Iron Content of Cocoa and Chocolate—The iron content of cocoa, baking chocolate, and milk chocolate has been reported as higher than values appearing in standard government Tables of Food Composition. An average of 6.71 and 10.86 mg. of iron per 100 gm. of cocoa and 4.29 and 6.87 mg. of iron per 100 gm. of baking chocolate were found in each of two brands of these products. An average of 0.91 mg. of iron per 100 gm. of milk chocolate was reported for the single brand analyzed. The higher iron content of cocoa, as compared with chocolate, is due to less dilution with cocoa butter, and/or sugar, and/or milk solids. The process of the powdering of cocoa may result in added iron from the steel equipment.

—J. Am. Diet. Assn. 26:93 (Feb.) 1950.

Protein Gives Sense of Well-being—Breakfasts which supply 22 gm. of protein, derived chiefly from milk and eggs, and a total of approximately 500 calories give a greater sense of well-being during the day than do breakfasts which contain less protein even though the total calories remain the same. This "feeling" is reflected in normal blood-sugar levels. There is a lower maximal rise but a relatively more sustained blood-sugar level when 22 to 25 gm. of protein are supplied in the morning meal than when there is a lesser amount. This effect continues even into the afternoon. These are the conclusions reached after a two-year study in which the response of adult women subjects to eight different breakfasts was measured. These breakfasts varied from only unsweetened black coffee to a full breakfast of foods commonly served at the morning table in American homes.

—Circular No. 827 U.S.D.A. (Dec.) 1949.

Evidence of Vitamin Interrelationships—Experiments done with rats and chicks show that there exists a mutual interdependence in the biological function of three of the more recently identified vitamins. The investigators conclude that the nutritional requirements of the chick and rat for folacin, vitamin B_{12}, or choline cannot be determined independently without consideration of the dietary level of the other two. This conclusion is based upon evidence that the deficiency symptoms of each are modified by the feeding of the others.

—J. Nut. 40:95 (Jan.) 1950.

ERRATA: Item: **Metabolism of Women on Cocoa Diets**—Nutrition News 13:10 (Feb.) 1950. 225 gms. and 700 gms. should read 225 mg. and 700 mg.

Mrs. Burke has been with the Department of Maternal and Child Health, Harvard School of Public Health, since 1932. Under the direction of Dr. Harold C. Stuart, director of this department, she has been in charge of nutrition research in the study of growth and development. She received the Borden Award in home economics in 1945. Mrs. Burke is research nutritionist at Boston Lying-in Hospital where prenatal studies of the department are conducted under a grant from the Nutrition Foundation. Dr. Samuel B. Kirkwood, assistant professor in this department and instructor, Department of Obstetrics and Gynecology, Harvard Medical School, is in charge of the obstetrical and physical findings. He also is obstetrician in charge of the Toxemia Clinic.

Improved world nutrition can best be reached by expanding technical assistance, recommended the fifth conference, Food and Agriculture Organization, recently. They suggest the FAO help countries establish nutrition services and provide consultants on request.

A good lunch service develops in children respect for their bodies as they learn what to eat and traits of sociability, equality, and stability as they eat together. These factors develop social conscience, said Mrs. Francis Mayfarth, Association of Childhood Education International, recently at the third annual conference, School Food Service Association.

A NUTRITION COURSE FOR EMPLOYEES' WIVES

By Gradie R. Rowntree, M.D., Medical Director
C. T. Dearing Printing Company, Louisville, Kentucky

When our company established a medical department in 1948, it provided medical service as well as emergency medical care. One project for improving health, morale, and welfare of workers was concerned with nutrition. Local nutritionists were invited to study diets of workers. It was found their diets could be improved and a nutrition program was organized.

First, the company which provides box lunches for many workers was approached. Suggestions that they include more whole-grain bread, raw vegetables, and add lettuce or tomato to sandwiches, were accepted and followed.

Since the wives are all-important in planning home meals, the next step was to organize a class for them in guidance to right food selection. It was thought such a course should pay dividends in better nourished workers and improved plant output. Nutritionists have long believed that proper food for workers reduces absenteeism and accident rate. Plans were made by a committee representing all plant departments, with the medical department and a community nutritionist, the director of the Central Dairy Council.

Wives Choose Topics

A questionnaire to employee's wives asked: "Would you be interested in attending a series of discussions, demonstrations, and movies, on low-cost dishes; child feeding; how to plan menus; how to select foods that are especially good for maintaining health; how to do marketing to advantage; where to get new recipes; what are some of the quick tricks and short cuts in providing appetizing, nourishing meals; and last, but not least, what are some of the new reducing (or gaining) diets?" It asked if wives wished a food section in the employees' magazine. Wives were asked to check topics they would like discussed. A letter of explanation from the president of the company went with each questionnaire.

First-choice topics proved to be low-cost dishes, planning menus, child feeding, meat substitutes, reducing and gaining, marketing, and recipes. Nearly all wanted recipes and menu-planning in the employees' magazine.

The response was significant. A room in a leading hotel was engaged for morning and afternoon meetings, one day a week for six weeks. The planning committee agreed that community resources should be utilized. Personnel of the state and local Boards of Health, State University, local Red Cross, Central Dairy Council participated. These sessions were arranged: Menu Planning, Party Fare for the Family, Marketing Hints, Infant and Preschool Health, Reducing and Gaining, Suggestions for Reducing Food Costs.

The company president's informal welcome at the opening session was received with enthusiasm and strengthened employer-employee relations.

A registered nurse, the wife of one of the employees, volunteered her services to care for small children at the hotel. The company provided toys.

The presentation of the lessons by different personalities from the community agencies enhanced interest. Attendance was excellent throughout.

Value of the Class

A survey proved that employees were impressed with the course and its results. Comments that meals at home had improved testified to its value. A reduction in plant accidents and absenteeism has been shown. While many factors are involved in this reduction, improved nutrition of the worker is no doubt playing its part.

A continuing feature of the program is an exhibit changed monthly in the plant lobby. This, plus the employees' magazine, stresses well-chosen meals.

The class attracted favorable community attention through newspaper articles. It demonstrated the value of industry's use of community resources. It helped knit company and employees more closely together. It was not a project of great magnitude, nor was it expensive, but we feel that it was far-reaching in the good it accomplished.

COOPERATIVE ACTIVITY TO IMPROVE FOOD HABITS OF PUERTO RICAN SCHOOL CHILDREN

By Orosina V. de Nevárez, Head Nutritionist, Bureau of Maternal and Infant Hygiene, Insular Department of Health, San Juan, Puerto Rico

Puerto Rico is densely populated, with low per capita income. Although mainly agricultural, most of the land is dedicated to sugar cane. Gross nutritional problems exist. Prevailing diets contain little milk, little meat, and only small amounts of green or yellow vegetables and fruits. The numerous low income groups live on rice, beans, and starchy vegetables or "viandas," as plantains, green bananas, white sweet potatoes. Codfish occasionally is added. Even with limited economic resources, the people can be better fed if they know the value of some of our neglected foods—our fruits, pigeon peas, and some of our vegetables.

Nutrition work in public health started in Puerto Rico in 1941. Nutritionists in that field have striven for improved nutrition so necessary among our school children. The first nutrition activities in schools were sporadic and limited in scope and accomplishments. We encountered difficulties due to lack of nutrition knowledge among school authorities, teachers, and parents. Then developments in health fields permitted creation of a health education program coordinated with the Department of Education. This has aided in overcoming difficulties.

A typical and successful nutrition education program was started in 1947 at Gautier Benitez School, an elementary school in Santurce. First, data was collected on the foods consumed by the 529 children for three days. The health educator of the school helped collect the records and interpret the study to teachers and parents. She, together with the school principal, won the cooperation of teachers, parents, and children.

Analysis of the reports indicated that 33 percent of the children's diets were deficient in milk; 73 percent in vegetables; 35 percent in fruits. Much to our surprise, the consumption of meat was not as low as we had expected, perhaps because Sunday was one of the days in the diet study. Sunday is one day

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DID YOU KNOW

—that in 1948, ice cream, cheese, and milk furnished 70 percent of the calcium, 47 percent of the riboflavin, and 25 percent of the protein in the food consumed in the United States?

—that in the Orient, soybeans are germinated, fermented, or fractionated to improve their nutritive value?

—that ice cream recently has been developed with an apple flavor?

—that in the United Kingdom, the school lunch program serves complete hot meals to over half of the school children?

—that cheese now can be pasteurized by radio waves after it has been ripened?

—that since 1925 the country's milk production has risen 29 percent whereas the number of cows has increased only seven percent, due to improved breeding, feeding, and management methods?

—that in Tibet a "delicious" soup is concocted by boiling butter, tea, and water together?

—that flowers from a tomato plant have been grown on synthetic food in glass flasks and developed into tasty, red tomatoes?

THINGS YOU'LL LIKE TO READ

Child Health Services and Pediatric Education—Report of The American Academy of Pediatrics, The Commonwealth Fund, New York. 1949. $3.50.

The American Academy of Pediatrics, with the U.S. Public Health Service, and U.S. Children's Bureau, combined efforts in the first nationwide survey of child health services to call attention of all interested in the health of children to deficiencies in existing services. Charts cover services of physicians and dentists in private practice, hospitals and community health agencies, pediatric education.

Outwitting Your Years — Clarence William Lieb, M.D. Prentice-Hall, Inc. New York, New York. 1949. $2.75.

Dr. Lieb tells in friendly and comforting manner that our years after forty can be our best years. The practical information covers many problems of geriatrics with a chapter on diet and one on reducing. Dr. Lieb recommends frequent health check-ups, healthful sports, amusements, religious faith, and "outwitting" idleness. Amusing anecdotes and quotations are frequent.

School Lunch Recipes . . . using Cheese and The National School Lunch Program, 1948-49 recently have been released by the Production and Marketing Administration, U.S. Department of Agriculture, Washington 25, D.C.

Family fare, food management, and recipes—Bureau of Human Nutrition and Home Economics, U.S. Department of Agriculture. Home and Garden Bul. No. 1, Superintendent of Documents, Washington 25, D.C. 1950. 25 cents.

This attractive booklet is packed with suggestions for getting more out of meals. Preceding the 200 recipes are sections of simply stated facts on nutrition, describing the role of essential nutrients and telling which food groups are best sources of which nutrients. Suggestions for a food plan, for smart buying, and for wise storing, appear.

COOPERATIVE ACTIVITY TO IMPROVE FOOD HABITS OF PUERTO RICAN SCHOOL CHILDREN

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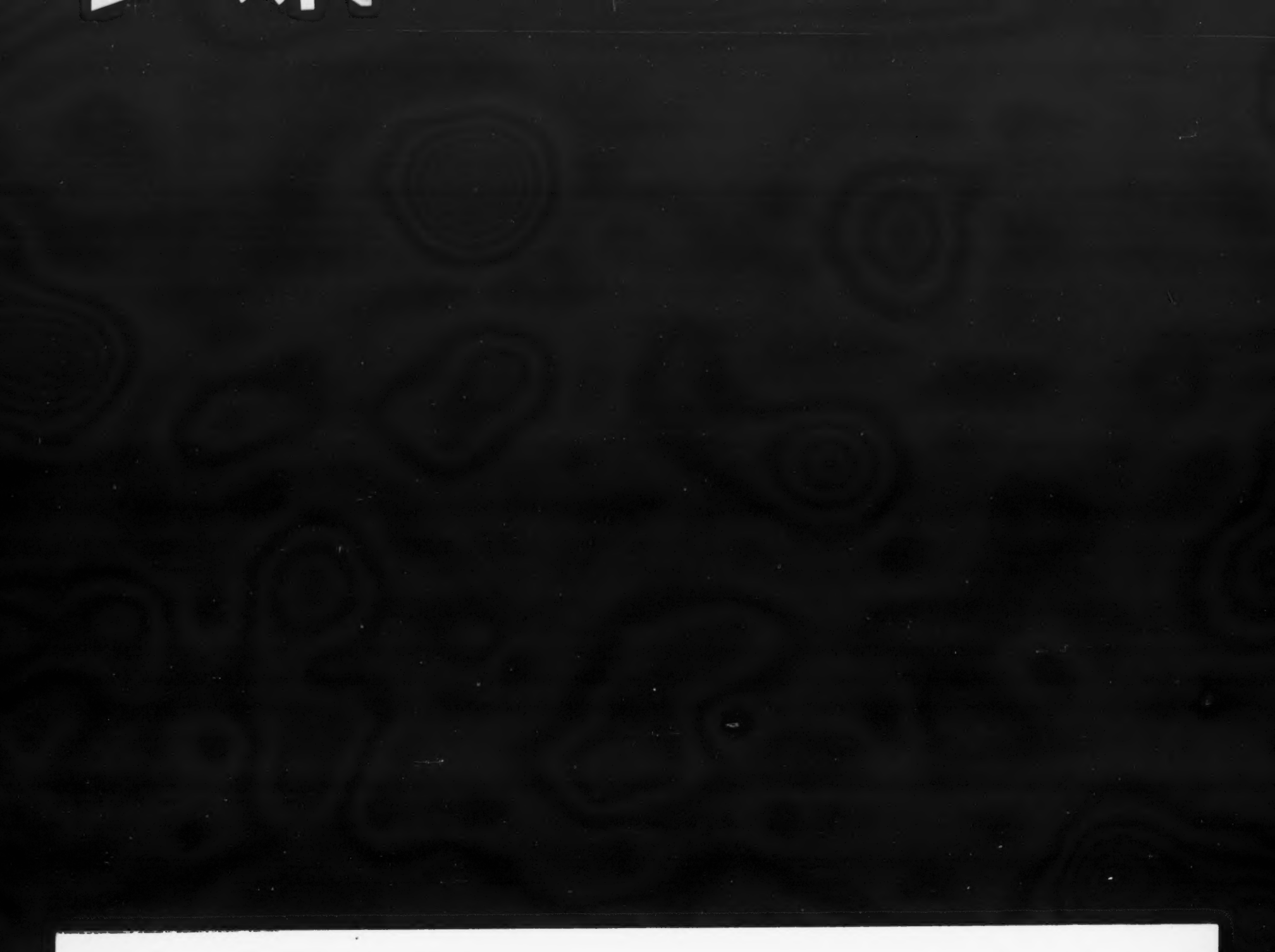
when any family in Puerto Rico, regardless of economic status, receives a little meat, if any, during the week. Sixty-one percent of the diets were deficient in whole-grain cereals. Polished rice is the cereal most commonly used. In general, 17 percent of the children appeared to be having a very deficient diet; 71 percent, a fair one; only 12 percent, a good diet.

This survey brought action. The health educator called together teachers, parents, and nutritionists in a discussion meeting. A plan emerged. Opinion favored an educational program which started immediately with six lessons in nutrition, given for teachers. The district supervisor of teachers, after taking the nutrition short-course, gave three teaching demonstrations on "How to integrate nutrition education in the school curriculum." Lessons on milk, vegetables, and fruits were demonstrated with three different grade groups. Teachers, principal, and visitors were enthusiastic after observing the demonstrations.

Thus equipped, teachers in Gautier Benitez School included nutrition education in classrooms. Milk, fruits, vegetables were stressed in spelling lessons; short stories about them were used. Milk was served as midmorning snack. Samples of our fruits and vegetables, as the yellow "calabaza," were brought to classrooms. Arithmetic problems centered around costs of these foods. Fresh fruits were prepared for simple classroom parties.

After summer vacation, the teachers received a "refresher" course in nutrition to reawaken interest. The program is continuing with enthusiasm.

Parent Education

Meetings with parents were held at the school by invitation of the health educator who kept in close touch with the parents in her health work. They were eager for food demonstrations, exhibits, and talks on use of dried milk and of our fruits, as papayas, mangoes, Red Indian Cherry, pineapple. The nutrition education in this school and community is a stimulation to other school communities in Puerto Rico.